

OFFICIAL

In re Application of
Masaki Morimatsu
Ito, Takeo

App. No.: 09/723016
Filed: November 27, 2000
Conf. No.: 5642
Title: COMPONENT OF A ROTATING
ELECTRICAL MACHINE
Examiner: K. Addison
Art Unit: 2834

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Ernest A. Beutler
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APPELLANTS' BRIEF

Commissioner for Patents
P.O. Box 1450
Arlington, VA 22313-1450

RELATED APPEALS AND INTERFERENCES

There are no other Appeals or Interferences, that have a bearing on or which would be affected by the decision in this Appeal.

REAL PARTY IN INTEREST

In addition to the appellants, the real party in interest is their assignee, Kabushiki Kaisha Moric, a Japanese company.

STATUS OF THE CLAIMS

Claims 1 through 5, the only claims in this case are all before the Board on Appeal.

STATUS OF AMENDMENTS

No amendment was filed in response to the final rejection, therefore the claims on appeal are as finally rejected. A clean copy of the claims appears in the Appendix to this Brief.

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App. No.: 09/723016
Filed: November 27, 2000
Conf. No.: 5642

Page 2 of 7

APPELLANTS' INVENTION

Appellants' invention relates to an improved coil winding arrangement for a rotating electrical machine such as a motor or generator and more particularly to an improved construction for the bobbin arrangement around which the coils are wound that includes integral terminal connections for the ends of the coils to facilitate the connection between them and the external electrical connections. In the case of an electric motor, the external connection is to an electrical power source. In the case of a generator, the external connection is to a circuit for receiving and controlling the electrical output of the machine.

As is noted in the specification of this case, these connections are normally made by soldered connections between the external terminal ends and the core coil winding ends. These connections are frequently bunched between the adjacent coils and thus, limit the available space and tend to make the machine larger than necessary. In addition, the formation of these soldered joints requires considerable labor and time and adds significantly to the expense of the machine. In addition, the use of the separate soldered connections also raises the possibility of poor connections or connections that can become easily broken. Furthermore, it is necessary to provide the external connection wires to be fastened to the core by some external fastening means such as screws or the like. These prior art arrangements also do not permit flexibility in the manner in which the coils are connected so that the machine design can not be easily changed to suit different applications.

In accordance with the invention, the insulating bobbin around which the coils are wound is formed with an integral terminal portion spaced radially from the coil windings and which carry a plurality of wiring conductors. Each of these wiring conductors having one terminal end connected at least one of the coil ends and another terminal end connected to one external electrical connector through the terminal portion to eliminate the need for a soldered joint therebetween.

The invention is described in full detail by reference to the figures in the appropriately headed portion of the specification.

ISSUES BEFORE THE BOARD

The issues before the Board are:

1. Is the recited structure of claims 1 through 5 obvious under 35 USC 103(a) from the combination of Japanese Publication 4-368455 (Nakamura) in view of US Patent 5,969,455 (Sakamoto)?

App. No.: 09/723016
Filed: November 27, 2000
Conf. No.: 5642

Page 3 of 7

2. Is the subject matter of claims 1 and 6 through 9 obvious under 35 USC 103(a) from the combination of Nakamura in view of US Patent 4,656,378 (Atherton)?

3. Is the subject matter of claims 1 and 11 through 14 obvious under 35 USC 103(a) from the combination of Nakamura in view of Atherton?

4. Is the subject matter of claims 10 and 15 through 18 obvious under 35 USC 103(a) from the combination of Nakamura in view of Atherton as applied against claims 1 and 11 through 14 in further view of Japanese Publication 7-163077 (Arai) in view of Sakamoto?

It should be noted at this point that these latter two grounds of rejection are inconsistent and circuitous. That is the rejection of claims 11 through 14 on the Nakamura Atherton combination is faulty because these claims depend directly or indirectly upon claim 10 which is rejected on the Nakamura Atherton Arai and Sakamoto combination. Hence until the Examiner clarifies this in his Reply, appellants can not fully respond to these later grounds of rejection.

5. What is the origin of the alleged translation of Nakamura on which the Examiner bases his rejection and is it correct?

GROUPING OF THE CLAIMS

As presently advised and depending how the Examiner rejects claim 10 in his Reply only claims 2 and 3 stand or fall together.

APPELLANTS' ARGUMENTS

Each of the three rejections of claim 1, the only independent claim in the application and on appeal is based primarily on the disclosure of the Japanese Nakamura published application. As a point that has been made to the Examiner in responding to the rejections based on this reference, that publication is assigned and made by applicants' assignee. The Examiner's interpretation of this reference is based on a translation of unknown origin and from the assignee's comments is incorrect, at least as far as the Examiner has been interpreting it.

The Examiner's position, as stated in the final rejection is that this reference has a bobbin 15c "having portions surrounding the pole teeth of the core" and that "all of the conductors are carried by one (sic) of the matting bobbin". However this interpretation is not supported by the drawings of the reference or even the questionable translation of it. The reference numeral 15c, which designates a portion of the core 15 has a lead line in Figure 3 of the drawings goes to the laminations and specifically the pole teeth portions thereof. Thus it is submitted that the word "bobbins" in the translation would more correctly be ---teeth---.

App. No.: 09/723016
Filed: November 27, 2000
Conf. No.: 5642

Page 4 of 7

More importantly, however, unless the Examiner can identify the source of the translation, he should not be permitted to rely upon it. Attached hereto, without waiving privilege, is a letter from the client's representative, dated October 10, 2002, stating that the translation is not correct and describing the actual structure as argued above.

Furthermore Figure 2 of the reference shows the conventional grouping or bunching of the external wires 19 for apparent soldering to the ends of the coil wires, although this is not mentioned in the partial translation provided. Thus it is most respectfully submitted that reliance on this reference is misplaced for the argued reasons.

It is also submitted that since the rejection is based on 35 USC 103, the teaching of the reference should be clear and unambiguous by itself. The Examiner, on the other hand, is trying to read applicants' disclosure into the reference and 35 USC 103 does not permit this.

The secondary references relied upon by the Examiner in his several rejections can not cure this defect because the basic reference fails to disclose any bobbin construction and thus one skilled in the art would not modify a nonexistent structure in light of the alleged teachings of these secondary references.

In addition to the aforescribed defect in the basic reference to Nakamura to disclose any bobbin at all, it also fails to show the "plurality of wiring conductors carried by said bobbin coil winding receiving portions" recited in claim 1. Again the Board's attention is drawn to the fact that the rejection here is under 35 USC 103 and this requires a clear showing of the claimed feature of the basic reference upon which one skilled in the art would make an obvious modification relying on a secondary teaching.

Claim 2 and those claims which depend directly or indirectly upon it (Claims 3-5) further require, as noted by the Examiner, the bobbin to be made from mating halves. Although the Examiner has cited a secondary reference that teaches this feature, the basic reference has no bobbin at all to modify. Thus the combination is not one that a skilled artisan would make.

Claim 4 and 5 still further distinguishes in calling for all of the conductors to be carried by one of the halves. Again this requires a modification to a nonexistent element of the basic reference, something not permitted by the Statute. None of the secondary references show a plurality of conductors carried by only one bobbin half.

Claim 5 further calls for the conductors to be conductors to be molded into the bobbin half. The examiner dismisses this as a process limitation, but he is again incorrect. This is a clear structural limitation that accurately describes structure.

App. No.: 09/723016
Filed: November 27, 2000
Conf. No.: 5642

Page 5 of 7

Turning now to claims 6 through 9, the Examiner discards the Sakamoto reference for these claims and shifts his reliance to Atherton. Atherton admittedly shows a connector to which a plurality of conductors are connected. Again, however, this feature per se is not claimed to be patentable. However to utilize a multiple connector as a part of the bobbin construction is. And that is not shown or taught by Atherton. In fact he teaches away from this feature as his connector is a separate piece that is fixed to an unidentified element indicated at 4 in Figures 1 and 2. Thus it is submitted that this reference offers no support for the Examiner's position.

Claim 6 and dependent claims 7 through 9 also calls for a specific coil grouping and although the Examiner claims the feature is taught by Atherton, the reference does not specifically refer to groups of coils to be grouped. It only describes three windings and no pole teeth, so the rejection also improperly reads appellants' teaching into the reference.

Curiously the Examiner rejects claims 11 through 14 on the Nakamura, Atherton combination even though these claims depend upon claim 10 which is rejected on the combination of Nakamura in view of Atherton as applied against claims 1 and 11 through 14 in further view of Japanese Publication 7-163077 (Arai) in view of Sakamoto. It is assumed that he intended to include claims 11 through 14 in this latter rejection, but appellants will await clarification before they can respond to these two latter rejections. However it is again pointed out that the Examiner is attempting to modify a nonexistent structure in the basic reference and these rejections can not be sustained.

Reversal of all grounds of rejection is requested.

Respectfully submitted:



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Attachments:
Letter dated October 10, 2002
Credit Card Authorization for Brief Fee

App. No.: 09/723016
Filed: November 27, 2000
Conf. No.: 5642

Page 6 of 7

APPENDIX CLEAN COPY OF THE CLAIMS ON APPEAL

1. A component of a rotating machine comprised of a plurality of coils each wound on the pole teeth of a core through a bobbin, said bobbin having portions surrounding said pole teeth of said core for receiving coil windings and an integral terminal portion spaced radially from the coil windings, a plurality of wiring conductors carried by said bobbin coil winding receiving portions, each of said wiring conductors having one terminal end connected at least one of said coil ends and the other terminal end connected to one external electrical connector through said terminal portion.
2. A component of a rotating machine as set forth in claim 1 wherein the bobbin is comprised of mating halves.
3. A component of a rotating machine as set forth in claim 2 wherein the bobbin mating halves encircle the pole teeth.
4. A component of a rotating machine as set forth in claim 3 wherein the other terminal end of all of the conductors are carried by one of the mating bobbin halves.
5. A component of a rotating machine as set forth in claim 4 wherein the one of the mating bobbin halves is molded with the conductor other terminal ends molded into the one mating bobbin half.
6. A component of a rotating machine as set forth in claim 1 wherein the coils are combined into at least two groups with the coils of each group being continuously wound from a single wire conductor extending between ends of said wiring conductors.
7. A component of a rotating machine as set forth in claim 6 wherein the other ends of said single wire conductors are connected to other terminal end of the wiring connectors at a common external electrical connector.
8. A component of a rotating machine as set forth in claim 7 wherein the common external electrical connector is adapted to cooperate with a detachable electrical connector through a male, female connection.
9. A component of a rotating machine as set forth in claim 8 wherein the male, female connection is made in a direction that extends radially to the axis of rotation of said machine.
10. A component of a rotating machine as set forth in claim 1 the bobbin is formed, integrally, with a plurality of internal wiring connectors each being formed with a terminal hole into which is led a coil end and with terminal hole into which is led one end of the wiring conductors, and further including a connecting block to be inserted in both of said terminal holes and provided with a connection circuit for connecting said coil ends and said wiring conductors.

App. No.: 09/723016
Filed: November 27, 2000
Conf. No.: 5642

Page 7 of 7

11. A component of a rotating machine as set forth in claim 10 wherein the coils are combined into at least two groups with the coils of each group being continuously wound from a single wire conductor extending between ends of said wiring conductors.

12. A component of a rotating machine as set forth in claim 11 wherein the other ends of said single wire conductors are connected to other terminal end of the wiring connectors at a common external electrical connector.

13. A component of a rotating machine as set forth in claim 12 wherein the common external electrical connector is adapted to cooperate with a detachable electrical connector through a male, female connection.

14. A component of a rotating machine as set forth in claim 13 wherein the male, female connection is made in a direction that extends radially to the axis of rotation of said machine.

15. A component of a rotating machine as set forth in claim 14 wherein the bobbin is comprised of mating halves.

16. A component of a rotating machine as set forth in claim 15 wherein the bobbin mating halves encircle the pole teeth.

17. A component of a rotating machine as set forth in claim 16 wherein the conductors are all carried by one of the mating bobbin halves.

18. A component of a rotating machine as set forth in claim 17 wherein the one of the mating bobbin halves is molded the conductors molded into the one mating bobbin half.

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October 10, 2002

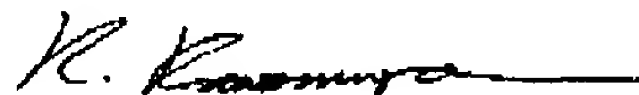
Re: F5667

Dear Mr. Beutler

Thank you for your letter dated October 2, 2002. I think the 15c in the English Translation of the construction is not correct. The 15c in the Fig2 of JP4-368455 is not a bobbin but a people teeth of the core on which the windings of the coil are directly wound. Your understanding is absolutely correct that there is no disclosure in it that indicated that the windings of coils are in any way embedded in or end in the bobbin.

Best regards

Very truly yours,



K. Kawamura

Executive President